



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

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May 27, 2015

Mr. Kevin McCormick  
Smith & Wesson, Corporation  
2100 Roosevelt Avenue  
Springfield, MA 01102

**RE: SPRINGFIELD**  
Transmittal No.: X264073  
Application No.: WE-15-001  
Class: NM50  
FMF No.: 130231  
**AIR QUALITY PLAN APPROVAL**

Dear Mr. McCormick:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed operation of two identical custom-made acetone cold cleaning degreasers at your small arms manufacturing facility located at 2100 Roosevelt Avenue in Springfield, Massachusetts ("Facility"). The Application bears the seal and signature of Tina Berceci-Boyle, Massachusetts Registered Professional Engineer Number 47799.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Emission Units (defined hereafter) to be operated in compliance with this Plan Approval.

## **1. DESCRIPTION OF FACILITY AND APPLICATION**

Smith & Wesson Corporation (“Smith & Wesson”) produces small-arm firearms at the manufacturing facility located at 2100 Roosevelt Avenue in Springfield, Massachusetts. At the facility, Smith & Wesson operates two identical, custom-made acetone cold cleaning degreasers used to clean metal parts prior to heat treatment in other portions of the facility. These degreasers were originally permitted in 1999 (Approval #1-P-98-030). These degreasers replaced an existing methylene chloride degreaser. Due to an increase in business, Plan Approval #1-P-98-030 was replaced in June 2002 with a Non-major Comprehensive Plan (“NmCPA”) (Application #1-P-02-007) which allowed for a total of 15 tons per rolling twelve months of acetone emissions from the degreasers.

Due to increases in utilization and changes in the types of parts washed in the degreasers, Smith & Wesson is requesting an increase in allowable acetone emissions to a total of 25 tons per year from the two existing acetone degreasers.

### **Process Description**

Metal Firearms parts are cleaned in the cold cleaning degreasers prior to heat treatment in one of four (4) vacuum furnaces. The cold cleaning degreasers are divided into 2 sections, “dirty-side” and “clean-side” The parts are placed in wire baskets, suitable for heat treatment, and immersed in the “dirty-side” acetone bath several times by the operator using a manually controlled pneumatic hoist. The baskets are held above the “dirty-side” acetone tank for at least 1-minute to allow excess acetone to drip off the parts and back into the tank. The operator then uses the hoist to lower the wire baskets into the “clean-side” acetone tank and the process is repeated. After agitation, the baskets are held above the “clean-side” acetone tank for at least 5-minutes to allow excess acetone to drip back into the “clean-side” acetone tank before the baskets are returned to the conveyor and then to the vacuum furnace.

When the degreasing process is completed the operator switches the lid actuation valves to close the degreaser lids and turn off the room ventilation system.

Acetone is replaced approximately every two weeks. Four 55-gallon drums of used acetone are removed from the “dirty-side” acetone tank and the “clean-side” acetone tank is then pumped to the “dirty-side”. The “clean-side” acetone tank is refilled using virgin acetone.

### **Applicable Regulatory Requirements**

The increased utilization of acetone which results in an increase of potential emissions greater than or equal to 10 tons per year, calculated over any consecutive 12 month time period, in accordance with 310 CMR 7.02(5)(a)(1) requires a modification. Since the proposed increase is equal to 10 tons, this requires the Facility to apply for and receive a new NmCPA unless that source is exempt from Plan Approval.

Acetone is not a Volatile Organic Compound (“VOC”) or Hazardous Air Pollutant (“HAP”). Under 310 CMR 7.00 – Definitions, Acetone (CAS #67641) is listed as an exempt compound under the list of VOCs in MassDEP Regulations. Acetone is also not designated by the United States Environmental Protection Agency (USEPA) as a HAP and is therefore not considered a HAP under MassDEP Regulations. Acetone is regulated as a non-criteria air pollutant; however it is still considered an air contaminant.

## **BACT Determination**

In order to satisfy the best available control technology (“BACT”) requirements of 310 CMR 7.02(8)(a)(2), Smith & Wesson conducted a Top Down BACT analysis. Cost estimates were analyzed for add-on controls including oxidation, condensation, absorption, and adsorption. None of these technologies were considered to be economically feasible for the project. Also, several of the technologies either introduced more pollutants by combustion or created additional pollutant waste streams to mitigate leading to a net negative environmental impact. Best Management Practices, pollution prevention and a limit on raw material usage is considered BACT for the acetone degreasers as the available add on control technologies failed to identify any feasible add-on controls.

Acetone modeled emissions will be  $\leq 3.6$  ppm (odor threshold for acetone) at the Smith & Wesson fence line based on a maximum hourly emission rate of 5.7 lb/hr, a stack exhaust rate of 7,200 cubic feet per minute (“cfm”), and a stack height of 28 feet above ground level and 8 feet above the roof.

## **2. EMISSION UNIT IDENTIFICATION**

Each Emission Unit (“EU”) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
3	HeatBath Corp. custom-design cold- cleaning degreaser	6 Batches of Parts Per Hour 64 cubic feet (volume)	None
4	HeatBath Corp. custom-design cold-cleaning degreaser	6 Batches of Parts Per Hour 64 cubic feet (volume)	None

### **Table 1 Key:**

EU = Emission Unit Number  
PCD = Pollution Control Device

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

<b>Table 2</b>			
<b>EU</b>	<b>Operational / Production Limit</b>	<b>Air Contaminant</b>	<b>Emission Limit</b>
3 & 4	6 Batches of 4 Wire Baskets of Metal Parts per Hour	Acetone	$\leq 6.0$ TPM $\leq 25.0$ TPY

**Table 2 Key:**

EU = Emission Unit Number  
TPM = Tons per calendar month

TPY = Tons per consecutive 12-month period

#### B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

<b>Table 3</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
3 & 4	1. Smith & Wesson shall track on a monthly basis, the amount of acetone used in these two degreasers; and the amount of acetone removed from the degreasers as waste, such that compliance with the emission limits specified in this Final Approval can be determined.
	2. Smith & Wesson shall monitor, on a daily basis, the number of batches of metal parts cleaned in each degreaser and the number of operating hours.
Facility-wide	3. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration
	4. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13

**Table 3 Key:**

EU = Emission Unit Number

CMR = Code of Massachusetts Regulations

<b>Table 4</b>	
<b>EU</b>	<b>Record Keeping Requirements</b>
3 & 4	1. Smith & Wesson shall track, on a monthly basis, the amount of acetone used in these two degreasers; and the amount of acetone removed from the degreasers as waste, sufficient to demonstrate compliance with the emission limits specified in this Final Approval.
	2. Smith & Wesson shall track, on a daily basis, the number of batches of metal parts cleaned in each degreaser.
	3. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15 <sup>th</sup> day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping">http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping</a> .
	4. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	5. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) approved herein on-site.
	6. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s). The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	7. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	8. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	9. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.
Facility-Wide	10. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.

**Table 4 Key:**

EU = Emission Unit Number  
SOMP = Standard Operating and Maintenance  
Procedure

PCD = Pollution Control Device  
USEPA = United States Environmental Protection  
Agency

<b>Table 5</b>	
<b>EU</b>	<b>Reporting Requirements</b>
3 & 4	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a “Responsible Official” as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
Facility-Wide	2. The Permittee shall notify the Western Regional Office of MassDEP, BAW Permit Chief by telephone: (413)755-2115, email: marc.simpton@state.ma.us, or fax : (413)784-1149, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report annually to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.

**Table 5 Key:**

EU = Emission Unit Number  
BAW = Bureau of Air and Waste

#### **4. SPECIAL TERMS AND CONDITIONS**

- A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

<b>Table 6</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
3 & 4	1. Smith & Wesson shall equip each acetone degreaser with a cover that is designed to be easily operated with one hand.
	2. Smith & Wesson shall equip each acetone degreaser with a drain so that, while draining, the cleaned parts are enclosed for 15 seconds or until dripping ceases, whichever is longer.
	3. Smith & Wesson shall close the covers of each acetone degreaser whenever parts are not being handled in the degreaser, or when the degreaser is not in use.
	4. Smith & Wesson shall allow parts baskets to drip above the “dirty side” acetone tank for a period of no less than 1-minute after agitation.

<b>Table 6</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
3 & 4	5. Smith & Wesson shall allow parts baskets to drip above the “clean-side” acetone tank for a period of no less than 5-minutes after agitation.
	6. Smith & Wesson shall repair all leaks immediately or shut down the degreaser.
	7. This Plan Approval, Tr. No. X264073, supersedes the Conditional Plan Approval, Tr. No. W0206054, issued to the Smith & Wesson on June 11, 2002, in its entirety, with the exception that all plan application materials submitted as part of the Plan Approval Tr. No. W0206054 become part of this Plan Approval, Tr. No. X264073.

**Table 6 Key:**

EU = Emission Unit Number  
Tr. = Transmittal  
No. = Number

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”
- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

<b>Table 7</b>				
<b>EU</b>	<b>Stack Height Above Ground (feet)</b>	<b>Stack Inside Exit Diameter or Dimensions (feet)</b>	<b>Stack Gas Exit Velocity Range (feet per second)</b>	<b>Stack Gas Exit Temperature Range (°F)</b>
3 & 4	28.0	1.27 Ft <sup>2</sup> 1.33 Ft. x 0.958 Ft.	93.0	Ambient

**Table 7 Key:**

EU = Emission Unit Number  
Ft = Feet

Ft<sup>2</sup> = Square Feet  
°F = Degree Fahrenheit

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between

provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Todd Wheeler by telephone at (413) 755-2297, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.

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Marc Simpson  
Permit Chief  
Bureau of Air & Waste

Enclosure

ecc: MassDEP/Boston - Yi Tian  
MassDEP/WERO – Peter Czapienski  
Arcadis U.S., Inc. – Tina Bercelli-Boyle